

JACKSONVILLE NAVAL AIR STATION

JACKSONVILLE, FLORIDA

Engineering Field Division/Activity: SOUTHDIV
Major Claimant: CINCLANTFLT
Size: 3,820 Acres
Funding to Date: \$49,078,000
Estimated Funding to Complete: \$231,498,000

Base Mission: Provides services and support operations for aviation activities and aircraft overhaul. The complex houses a naval aviation depot, a naval supply center, and several air squadrons

Contaminants: Acids, caustics, cyanide, heavy metals, low-level radioactive radium paint wastes, oil, paint, PCBs, pesticides, phenols, radioisotopes, waste solvents

Number of Sites:		Relative Risk Ranking of Sites:	
CERCLA:	46	High:	18
RCRA Corrective Action:	3	Medium:	7
RCRA UST:	11	Low:	22
Total Sites:	60	Total Sites:	60

NPL



EXECUTIVE SUMMARY

Jacksonville Naval Air Station (NAS) is located in southwestern Duval County, within the limits of the city of Jacksonville, Florida, approximately ten miles south of the central business district and 15 miles from the Atlantic Ocean. Jacksonville NAS includes the following site-types: fire fighting training areas; waste storage and disposal areas; transformer storage areas; radioactive waste disposal areas; and other miscellaneous support and maintenance areas. The media types of greatest concern are soil, groundwater and sediments. Typical air station operations have contributed to the contaminants of concern, including solvents, sludge from on-site treatment plants, and low-level radioactive waste. Over the years, contaminants have migrated into nearby soils and local groundwater supplies. This led to the placement of the NAS on the National Priorities List (NPL). Current operations include pollution prevention technologies to prevent further contamination. A Federal Facilities Agreement (FFA) between the Navy and the EPA was signed in October 1989, which governs the cleanup schedule.

The groundwater of northeast Florida is made up of two aquifer systems; the deep Floridian aquifer and the shallow aquifer. The deep Floridian aquifer is the principle aquifer for supplying water to the City of Jacksonville and the NAS. It is not a major concern for contamination because it is protected by a 200 foot thick confining layer, and the upward flow of water under artesian pressure. The shallow aquifer is of primary concern because of its potential for contamination from surface sources. The migration of contaminants in surface water at Jacksonville NAS is not a major concern.

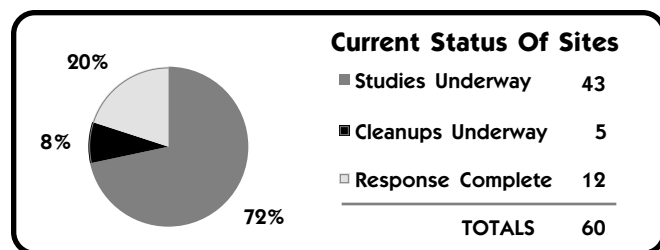
A Technical Review Committee (TRC) was formed in FY88. For greater community involvement, the TRC was converted to a Restoration Advisory Board (RAB) in March 1995 and meets monthly in Jacksonville, Florida. There are eight members in the RAB, made up of both Navy employees, state and federal regulators and local citizens. A charter for the RAB has been developed and after receiving technical training, RAB members have

reviewed several Interim Records of Decision (IROD) and Remedial Investigation/Feasibility Studies (RI/FSs). An Information Repository was established in FY91 at the Wesconnet Public Library in Jacksonville, Florida.

To simplify and expedite the cleanup process, three Operable Units (OUs) were defined based on geographic location, type and nature of contaminants, and media contaminated. OU 1 consists of two disposal pits, Sites 26 and 27. OU 2 consists of Sites 2-4, and 41-43 and is known as the Wastewater Treatment Plant Area. OU 3 consists of six sites (Sites 11-15 and 48) and is known as the Industrial Area. In addition, the installation has ten Underground Storage Tank (UST) sites. In February 1993, the Navy's Radiological Affairs Support Office (RASO) performed a radiological survey of various sites at Jacksonville NAS. Another radiological survey was performed in September 1994 at the nine sites of concern. It is anticipated that soil removals will be required to reduce the radiological contamination at the sites. The survey and removal actions are expected to be completed in FY96.

There are several areas where Jacksonville NAS is having significant success. A Remedial Response Decision System (RRDS) document was finalized in October 1995. The document was created as a management tool for identified Installation Restoration Sites at Jacksonville NAS. This system is an innovative approach. It establishes guidelines and criteria for evaluating existing site data and proposing remedial responses. Implementation of the RRDS began in FY94, with the first remedial decisions made in FY95.

For risk reduction at Site 26 (Old Main Registered Disposal Area), berms were placed surrounding the drainage ditches to direct surface runoff away from the ditches, to retain the solvents on the site and to block their migration path. At Site 18 (Radioactive Waste Fill Area), fences were erected to minimize the chance of human and animal contact with the contaminated soil. There is a plan to consolidate sites by digging up and moving contaminated soil from other sites to the fenced in area of Site 26. In an effort to accelerate cleanups, contaminated waste from Sites 41 and 43 will be stabilized (chemical and physical treatment of soils and metals) and consolidated on Site 42 in FY96. The treated soil will then be used as filler for a settling pond, which reduces the cost for clean fill and no water treatment will be required. Site 2 and the adjoining UST will be treated at the same time. Petroleum products from both sites will be brought to a thermal desorption plant. At Site 26, a passive recovery system for Liquid Non-Aqueous Phase Liquid (LNAPL) will be operated by base personnel instead of contractors.



JACKSONVILLE NAS RELEVANT ISSUES

ENVIRONMENTAL RISK



HYDROGEOLOGY - The groundwater of northeast Florida is made up of two aquifer systems; the deep Floridian aquifer and the shallow aquifer. The shallow aquifer is composed of surficial sand, silts and clays and a porous, cavernous limestone unit. It sits on the complex aquiclude, which separates the shallow aquifer from the deep, Floridian aquifer. Due to the sandy surface found at the NAS, much of the 53 inches of average annual precipitation that falls on the surface infiltrates into the ground to recharge the shallow aquifer (water table). For the same reasons, contaminants spilled or disposed of at or near the surface can readily percolate downward to the water table and then migrate laterally under the prevailing groundwater flow rate and direction. The Floridian aquifer produces water under artesian pressure and is recharged naturally by rainfall where the limestone of the aquifer is exposed at the surface. The deep Floridian aquifer is the principle aquifer for supplying water to the City of Jacksonville and the NAS. It is not a major concern for contamination because it is protected by a 200 foot thick confining layer, the aquiclude, and the upward flow of the artesian component of the aquifer precludes the downward migration of contaminants. The shallow aquifer is of primary concern because of its relative ease of contamination from surface sources. The migration of contaminants in surface water at Jacksonville NAS is not a major concern. The relatively light infiltration capacity of the sandy soils, along with the flat topography of most of the station, tend to reduce the amounts and rates of direct surface water runoff. This reduced amount of surface runoff means a decreased potential for pollution migration via natural surface water drainage systems.



NATURAL RESOURCES - The NAS is bounded on three sides by off-base housing developments which use the shallow aquifer supply for their domestic water purposes. Surface waters from the station migrate into the St. John's River which is rated by the Florida Department of Regulations as a Class III waterbody, a protected waterway, and is designated for fish and wildlife propagation and human recreational uses. Endangered species present in the area include the Manatee and various waterfowl.



RISK - A Baseline Risk Assessment for Human Health and Ecological Risk Assessment, as part of the RI/FS for Sites 26 and 27, was performed in FY95, following EPA guidance. Risks for potential future land uses are above EPA risk range for surface soil and groundwater. In FY96, a risk assessment, in conjunction with an RI/FS, will be done at OU 2 (Sites 2-4 and 41-43).

The Navy completed a Department of Defense (DOD) Relative Risk Ranking for the installation in FY95. Of the 60 sites at Jacksonville NAS, 18 sites received a high relative risk ranking. Fifteen of the 18 were ranked high for groundwater contamination; eight with evidence of a pathway to the receptors, the other seven had only a potential for a migration pathway. The contamination was from a variety of site types, from disposal areas and a fire fighting training area to sludge beds and a polishing pond. The other sites receiving high rankings were for contamination of surface water with the potential for both human and ecological receptors. There was only one site, Site 48 (Navy Exchange (NEX) Laundry), which had evidence of high risk soil contamination.

The Agency for Toxic Substance and Disease Register (ATSDR) will perform a public health assessment for the installation in March 1996.

REGULATORY ISSUES



NATIONAL PRIORITIES LIST - NAS Jacksonville was placed on the National Priorities List (NPL) 12 December 1989 with a Hazard Ranking System (HRS) score of 31.02. Site 26 (Old Main Registered Disposal Area) was the likely site driving the inclusion of Jacksonville NAS on the NPL because of its many years as the main site for waste disposal. Based on an FY83 study, there was a potential for contaminants (including the organic solvent TCE, the chemical additive PCB, cadmium, chromium, lead, copper and mercury) to migrate in groundwater off-site and endanger local water supplies. At that time, there were private wells in shallow groundwater within three miles of the hazardous substance site that provided drinking water to an estimated 300 people.



LEGAL AGREEMENTS - An FFA, signed in October 1989, was between the Navy, EPA and the State of Florida. The Site Management Plan (SMP), established in the FFA for Jacksonville NAS, is updated annually.



PARTNERING - Jacksonville NAS established a partnering team, which includes EPA, Florida Department of Environmental Protection (FDEP), Comprehensive Long Term Environmental Action Navy (CLEAN) contractors, Remedial Action contractors, Navy personnel from Naval Facilities Engineering Command (NAVFAC) Engineering Field Division (EFD) Southern Division (SOUTHDIV), and Jacksonville NAS. The team was formed in December 1993. It meets regularly to plan the work to be accomplished and come to agreement on any problems. A general acceleration of the Installation Restoration (IR) process at Jacksonville NAS was accomplished through the use of partnering. Less time is spent in reviewing documents and making plans due to the increased communication between team members.

COMMUNITY INVOLVEMENT



RESTORATION ADVISORY BOARD - A TRC was formed in FY88 for regulatory involvement. For greater community involvement, the TRC was converted to a Restoration Advisory Board (RAB) in March 1995 and meets the third Tuesday of each month in the Timucuan Elementary School Library in Jacksonville, Florida. There are eight members in the RAB, made up of both Navy employees, state and federal regulators and local citizens. Members are elected to a two year term. Membership includes a base employee, DOD police officer, a local bank employee, an insurance company employee, a Jacksonville Nature Center representative, and a retired civil engineer. A charter for the RAB has been developed and initial team building and technical training sessions have been conducted. Based on the technical training the RAB members have been able to review IR documents and they also had a tour of the NAS.



COMMUNITY RELATIONS PLAN - A Community Relations Plan (CRP) was completed in 1991. In addition, Jacksonville NAS has published nine Fact Sheets including two that were completed in September 1994.



INFORMATION REPOSITORY - An Administrative Record and Information Repository were established in FY91. The Administrative Record is maintained by NAVFAC SOUTHDIV. The Information Repository is located at the Wesconnet Public Library in Jacksonville and contains copies of Administrative Record documents.

JACKSONVILLE NAS HISTORICAL PROGRESS

FY83

Sites 1-6, 8-18, 20-32, and 34-43 - An Initial Assessment Study (IAS), equivalent to Preliminary Assessment (PA) for 40 CERCLA sites was completed.
Site 19, and USTs 1 and 4 - Initial Site Characterization (ISC) completed for three RCRA UST sites.

FY86

Sites 2-4, 11-15, 26 and 27 - Site Inspections (SI) for ten sites completed.

FY88

Site 26 - Surface water drainage controls completed.

FY89

SWMU 2 - Corrective Measures Implementation (CMI) and an IRA started.

FY91

UST 1 - Corrective Action Plan (CAP) was started.

FY92

Sites 1, 5-10, 16-18, 20-25, 28-32 and 34-45 - SI for 32 sites completed.
Sites 1, 6, 10, 24, 34, 36 and 37 - Seven sites listed as Response Complete (RC) after SI phase.
Sites 7, 19 and 33 - Moved three CERCLA sites to the UST program.
Site 19 - Investigation (INV) completed for one RCRA UST site.
SWMU 3 - CMI and IRA started for RCRA site SWMU 3.

FY93

Sites 26 and 27 - Remedial Investigation/Feasibility Study (RI/FS) began for OU 1 sites.
Sites 2-4 and 41-43 - Implemented RI/FS Work Plan for OU 2 sites.
USTs 2, 3, 5, 6 and 8 - ISC completed for five RCRA UST sites.
USTs 3, 5, 6 and 8 - Four RCRA UST sites were listed as Response Complete after the ISC.
UST 4 - CAP was started.

FY94

All Sites - The RASO performed a radiological survey of various sites at the installation and released the final report in FY94. The report recommended further evaluation and delineation of radiological contamination. As a result of these recommendations, the installation initiated a radiological survey in September 1994.
All Sites - Implementation of RRDS document for decision making began, with the first remedial decisions made in FY95.
Sites 18 and 27 - Two IRAs were completed at Site 27, one IRA was started at Site 18. A fence was erected on both sites to restrict access and soil removal was completed on Site 27.
Sites 26 and 27 - ROD signed in August 1994 with estimated completion of FY96, was for recovery of Light Non-Aqueous Phase Liquid (LNAPL) at Sites 26 and 27.
SWMU 1 - Corrective Measures Study (CMS) completed, CMI and Final Remedial Action (FRA) started.
UST 2 - CAP completed and Implementation (IMP) was begun.
UST 4 - Removal action for removal of contaminated soil and waste containers from UST 4 (Gas Hill Building 159) was completed.
UST 9 - ISC completed.

PROGRESS DURING FISCAL YEAR 1995

FY95

All Sites - A radiological survey of all sites, scheduled for completion in FY95, was not accomplished due to funding constraints.
All Sites - An RRDS document was finalized in October 1995. The document has been created as a management tool to establish guidelines and criteria for evaluating existing site data and proposing remedial responses. The first decision was made using this system in November 1995.
Sites 11, 13 and 26 - Three IRAs were started at three CERCLA sites. Soil removal at Sites 11 and 13, and groundwater treatment at Site 26.
Sites 18 and 26 - To reduce risk to human exposure: Site 18 (Radioactive Waste Fill Area), fences were erected to minimize the chance of human and animal contact with the contaminated soil. At Site 26 (Old Main Registered Disposal Area), berms were placed around drainage ditches to direct surface runoff away from drainage ditches and to contain contaminants on the site.

Sites 26 and 27 - A Baseline Risk Assessment for Human Health and Ecological Risk Assessment was performed during an RI/FS for Sites 26 and 27.
Site 42 - An IROD signed in February 1995 was for soil stabilization at Site 42. The stabilized waste from two other sites (Sites 41 and 43) is to be placed with the stabilized soil at Site 42. In addition to saving time, use of the stabilized waste for filler reduces the cost for the cleanup project.
Sites 2-4 and 41-43 - Began an RI/FS activities at six sites.
Sites 2, 41 and 43 Soil removal and soil stabilization at Sites 41 and 43 and thermal desorption for Site 2 completed. The ROD for these actions was signed in FY94.
USTs 7 and 10 - CAP begun.
UST 7 - ISC completed.
UST 9 - CAP completed.

PLANS FOR FISCAL YEARS 1996 AND 1997

FY96

Sites 2-4, 26, 27 and 41-43 - RI/FS activities to be completed at eight sites.
Site 26 - Groundwater treatment was completed.
Site 42 - An IRA for in-situ soil treatment started.
Sites 11-15 and 48 - Engineering Evaluation/Cost Analysis (EE/CA) planned for six sites to determine what steps to take for final cleanup.
USTs 1 and 7 - Four IRAs will start at two UST sites. UST 1 will have tank and soil removal, and groundwater treatment. UST 7 will be removed.
UST 2 - An FRA and IMP will be completed.
UST 7 - IMP will begin.
USTs 7 and 10 - CAP will be completed.

FY97

Sites 11-15, 30 and 48 - RI/FS activities to be completed at seven sites.
Site 26 - Remedial Design (RD) to be completed.
UST 1 - CAP will be completed and IMP will begin.
USTs 7 and 10 - CAP will be completed.

JACKSONVILLE NAS PROGRESS AND PLANS

CERCLA	FY94 and before	FY95	FY96	FY97	FY98	FY99	FY00	FY01 and after
PA	40							
SI	42							
RI/FS			10	7	3	2		16
RD				1			1	24
RA		1	1					26
IRA	2(3)		14(14)				1(1)	
RC	7	1	4					34
Cumulative Response Complete	15%	17%	26%					100%
RCRA CA	FY94 and before	FY95	FY96	FY97	FY98	FY99	FY00	FY01 and after
RFA								
RFI								
CMS	1							
DES								
CMI			2					1
IRA			1(1)					1(1)
RC			2					1
Cumulative Response Complete			67%					100%
UST	FY94 and before	FY95	FY96	FY97	FY98	FY99	FY00	FY01 and after
ISC	9	1						
INV	1							
CAP	1	1	2	1		1		1
DES								
IMP			1		2			3
IRA			1(1)	1(3)				
RC	4		1		2			4
Cumulative Response Complete	36%		45%		64%			100%